Comparison of yield, yield components and seed quality (oil and protein content) of two rapeseed cultivars as affected by different levels of soil-applied nitrogen and zinc

V. Olama¹*, A. M. Ronaghi¹, N. A. Karimian¹, J. Yasrebi¹, R. Hamidi² and M. Tavajjoh¹

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Abstract
A greenhouse experiment was conducted in order to evaluate the influence of different nitrogen (N) and zinc (Zn) levels on yield, yield components, seed quality and N and Zn contents of two cultivars of rapeseed (Brassica napus L.). In this study, two cultivars of rapeseed (Talayeh and Opera), three N levels (100, 200 and 300 mg/kg) and three Zn levels (0, 5 and 10 mg/kg) with three replications were used. The results showed that significant differences were observed between the cultivars in the studied traits. Increasing N and Zn significantly increased plant height, number of siliques per plant, number of seeds per siliques, 1000-seed weights, seed yield, oil straw and root yields and protein content. Oil seed content was the highest in application of 100 mg/kg N rate and then decreased or increased at higher N and Zn rates, respectively. The highest grain yield, oil yield and protein percentage were obtained with 300 mg/kg N and 10 mg/kg Zn. Increase in seed yield was related to increase in the number of siliques per plant and number of seeds per siliques. Application of treatments increased concentration of N and Zn in the seeds, straw, and roots of both rapeseed cultivars. The interaction of N and Zn showed significant effects on most studied traits of rapeseed.

Keywords: Oil seeds, Qualitative traits, Protein Oil.

1. Dept. of Soil Sci., College of Agric., Shiraz Univ., Shiraz, Iran.
2. Dept. of Agron. and Plant Breed., College of Agric., Shiraz Univ., Shiraz, Iran.
*: Corresponding Author, Email: vidaolama@gmail.com